LV.—*Descriptions of Palæozoic Corals in the Collections of the British Museum* (*Nat. Hist.*).—No. I.

By Robert Etheridge, Jun., and Arthur H. Foord, F.G.S.

[Plate XVII.]

Favositella, gen. nov.

Gen. char. Corallum of irregular form, concavo-convex, thin; attached to some foreign body; composed of minute rounded or subpolygonal contiguous corallites, which are of two kinds, large and small; the latter distributed over the surface in clusters, raised slightly above the general level. Walls lamellar, distinct. Tabulæ in the larger cells somewhat remote, horizontal, slightly curved, with the convexity downwards; more numerous in the smaller ones. Mural pores few in number, large, irregularly distributed. Base covered with a concentrically striated epitheca.

Obs. In all its external characters this form bears a marked resemblance to some of the genera of the Monticuliporidæ, and until microscopical sections of it had been examined it was unhesitatingly referred to that group. The presence of mural pores, however, points clearly to its Favositoid affinities, while from all the known genera of the Favositidæ it is distinguished by the monticulose character of its surface and the dimorphic structure of its tubes. As regards the perforation of the walls in *Favositella*, a character which excludes it from the Monticuliporidæ, it is true that Mr. E. O. Ulrich * (who has given much attention to that group) states that he has detected mural pores in a "single specimen of an undoubted Monticuliporoid species," viz. *Homotrypa curvata*, Ulrich; but, granting that they do occur in this one species, it may be confidently affirmed that out of hundreds of sections of Monticuliporoid species which have been examined by Dr. Nicholson, Mr. Ulrich, and one of the writers of this paper, no such structures have been seen in any other form. If *Homotrypa curvata* does possess mural pores, then the proper course is to remove it from the Monticuliporidæ and place it in the Favositidæ, where also *Stenopora* finds its appropriate position, and not in the Monticuliporidæ, according to Mr. Ulrich's amended classification of that group †. In brief, *Favositella* differs from all other genera of the Favositidæ in

* Journ. Cincinnati Soc. Nat. Hist., "American Palæozoic Bryozoa," vol. v. p. 124 (1882).

† *Loc. cit.* p. 153.

the minuteness and dual character of its corallites and in its monticulose surface. From the Monticuliporidæ it is separated by the possession of mural pores.

We are acquainted at present with only one species. This has been quite inadequately described, though well figured, by Quenstedt (whose specimens came from Dudley) under the name of *Favosites interpunctus*.

Favositella interpuncta, Quenst. sp. (Pl. XVII. figs. 1–1*f*.)

Favosites interpunctus, Quenstedt, Petref. Deutschl. 1881, Abth. i. p. 10, t. 143. f. 9.

Sp. char. Corallum of medium size, the largest measuring about 7 centim. in its greatest diameter and about 10 millim. in its greatest thickness, usually elongate, sometimes nearly circular, concavo-convex, rising above into irregularly rounded or lobate elevations, with thin slightly expanded margins. Base shallowly concave, covered with a concentrically wrinkled epitheca; usually attached to a shell or other foreign body, which seems, at least in some cases, to have governed the form assumed by the corallum. The thin margins of the latter are sometimes contracted or folded inwards towards the object of attachment, so that their outline exhibits an irregularly sinuous appearance. The tubes which compose the corallum are so minute as to be barely distinguishable, excepting in well-preserved specimens, without the aid of a lens; they open upon the upper surface, the small tubes forming groups about 5 millim. apart, elevated a little above the general level of the surface, so as to constitute faintly defined monticules. The corallites, as seen in tangential sections, are irregularly rounded or subpolygonal in outline, with thick walls. The smaller ones are intercalated at the angles of junction of those of larger size. The latter measure about one half, the former from about one tenth to one fifth of a millimetre in diameter. Longitudinal sections exhibit great irregularity in the walls of the corallites; these are crinkled, with here and there a minute septum-like projection of the wall. The tabulæ of the larger tubes are very delicate, horizontal, or a little oblique, and slightly curved, and placed at from one to two tube-diameters apart. In the smaller cells the tabulæ are more numerous and are thickened with a fibrous layer of sclerenchyma. Mural pores of a large size, remote and irregularly disposed, are seen in these sections.

Obs. The species above described occurs abundantly in the Wenlock Shales at Dudley, Worcestershire, associated with

the characteristic fossils of that formation. In some specimens the mural pores have been filled with chalcedony of a concentric structure. It may be noted that the pores are so large as to be seen on a polished surface with a hand-lens.

Locality and Horizon. Dudley, Wenlock Limestone.

Collection. British Museum (Natural History), and A. H. Foord.

Genus Chætetes, Fischer, 1837.

Chætetes Lonsdalei, Eth. & Foord. (Pl. XVII. figs. 2–2 *c*.)

Sp. char. Corallum incrusting in the young state, probably forming large masses in a more advanced stage of growth, of undeterminable dimensions, composed of minute closely contiguous corallites, of which three or four, according as they are measured in conformity with their longer or shorter diameter, occupy the space of 1 millim. Calices polygonal, very irregular in outline, with from one to four tooth-like projections characteristic of *Chætetes*. Tabulæ numerous, complete, horizontal, or slightly arched, usually about one tube-diameter apart.

Obs. So far as we are aware, no species of *Chætetes* has been described hitherto from the Devonian rocks of Devonshire, as the *Chætetes tumidus* mentioned by Mr. T. M. Hall from the Pilton beds of Braunton (Quart. Journ. Geol. Soc. 1861, xxiii. p. 376), if correctly determined, is now known to be a Monticuliporid. We have the present species in the young state incrusting a Cyathophylloid coral, and there is evidence to show that at a more advanced age it became massive and probably lobate. The largest specimen, which is a polished fragment, measures $8\frac{1}{2}$ centim. in its greatest, by about 6 centim. in its smallest diameter. This species is distinguished from all others known to the writers, except *C. depressa*, Fleming, sp., by the minuteness of its corallites, and from the latter by the numerous septum-like projections of its calices and the greater irregularity of the corallites. The so-called "septal teeth" in *Chætetes* are now known to be due, as originally pointed out by Lonsdale, to "fission taking place in the older corallites" (*vide* Journ. Linn. Soc. vol. xiii., Nich. & Eth., jun., "On the Genus *Alveolites*," &c. p. 353, 1877). It becomes therefore a question whether such a character can be used as a means of specific separation, unless, indeed, the degree of fissiparity differs in various species. Under the circumstances it will be better to say that the form now before us differs from its nearest ally *C. depressa*, Flem., sp., in the greater irregularity of its corallites.

Many Devonian Corals have been referred to the genus *Chætetes*, but in most cases these have been shown to belong to other genera. In concluding his notice of *Chætetes* Prof. H. A. Nicholson remarked, "The species . . . . are not known to occur out of the Carboniferous (and possibly the Devonian) rocks" ('Tabulate Corals,' 1879, p. 266). There are, however, a few forms which should be referred to in passing; for instance, in 1851, Messrs. Edwards and Haime described their *C. Trigeri* (Mon. Polyp. Foss. Terr. Pal. p. 269, t. xvii. fig. 6), which from the description appears to belong perhaps to the genus. Mr. A. Winchell has likewise described (Report Geol. & Industrial Resources of the Peninsula of Michigan, 1866, pp. 89, 90) two species under the names of *C. hamiltonensis* and *C. microscopicus*. In the first, the septa are said to be "complete," and we should therefore doubt its reference to the present genus at all; whilst the description of the second is, lacking a figure, too brief for identification.

The Devonian rocks of Muscatine, Iowa, have yielded to the researches of Dr. C. A. White an exceedingly fine form, *C. muscatinensis*, White, of which we have examined specimens; and although in many respects resembling a *Chætetes*, we do not feel justified in at once pronouncing it to belong to that genus. Lastly, Prof. F. von Römer has recently described (Lethæa Geogn. 1883, i. Th. p. 459) a coral from the Devonian rocks of the Eifel, as *C. stromatoporoides*. This is clearly distinct from our species, and, in fact, the author appears to doubt its reference to *Chætetes* at all.

We have much pleasure in associating with this coral the name of the late Mr. W. Lonsdale, who may be said to have laid the foundation for the study of British Devonian Corals, and for that of the genus *Chætetes* in particular.

Loc. and Horizon. Bishop's Teignton, near Torquay, and Torquay, S. Devon.

Collection. British Museum (Natural History), presented by Messrs. A. Rogers and E. B. Luxmore.

EXPLANATION OF PLATE.

Fig. 1. *Favositella interpuncta*, Quenst., sp. Specimen showing lobate form of the corallum. About $\frac{2}{3}$ natural size. Coll. Foord.

Fig. 1*a*. Another specimen, drawn to the same scale. Coll. Brit. Mus. (Nat. Hist.)

Fig. 1*b*. Under surface of the preceding, showing the wrinkled epitheca. Attached to a *Bellerophon*?

Fig. 1*c*. Tangential section of this species. Enlarged about 15 diameters.

Fig. 1*d*. A single cell, enlarged about 50 diameters.

Fig. 1*e*. Longitudinal section, showing pores. Enlarged about 15 diameters.

Fig. 1 *f*. Portion of a longitudinal section, showing one of the small tubes between two larger ones. Enlarged about 15 diameters.

Fig. 2. *Chætetes Lonsdalei*, Eth. & Foord. Small polished specimen, showing this species incrusting a Cyathophylloid Coral. Nat. size. Coll. Brit. Mus. (Nat. Hist.).

Fig. 2 *a*. Tangential section, showing septum-like teeth. Enlarged about 15 diameters.

Fig. 2 *b*. A few cells, enlarged about 50 diameters. In this figure the walls of the corallites are represented with somewhat too regular and curved an outline. Their true character is best seen in fig. 2 *a*.

Fig. 2 *c*. Longitudinal section, enlarged about 15 diameters.

LVI.—*On the Orthoptera collected during the recent Expedition of H.M.S. 'Challenger.'* By W. F. Kirby, Assistant in the Zoological Department, British Museum.

The present paper includes only the families Blattidæ, Mantidæ, Phasmidæ, and Gryllidæ. One species of Phasmidæ is here described as new.

Cursoria.

Blattidæ.

1. *Panchlora indica.*

Blatta indica, Fabr. Syst. Ent. p. 272 (1775).

San Jago, Cape Verdes, Aug. 10, 1873.

2. *Panchlora viridis.*

Blatta viridis, Fabr. Syst. Ent. p. 272 (1775).

Bahia, Sept. 1873.

3. *Panchlora maderæ.*

Blatta maderæ, Fabr. Spec. Ins. i. p. 341 (1781).

St. Vincent, Cape Verdes, July 1873.

4. *Epilampra laticollis.*

Epilampra laticollis, Walk. Cat. Blatt. B. M. p. 203 (1868).

Queensland (three specimens).

The type is from Richmond River. The species is allied to *E. notabilis*, Walk., but is larger and paler. The latter species is probably synonymous with *E. inquinata*, Stål.